

**Claims**

1. A separating vessel suitable for use in the treatment of a mineral sample wherein a molten slag is separated from a molten collector material comprising a container defining an interior cavity for receiving the molten materials, an outlet aperture leading from the interior cavity to the exterior of the container, and a separating surface associated with the outlet aperture which is shaped to cause droplets of flux to be carried along such surface, while droplets of collector material drip off such surface by the force of gravity.
2. A separating vessel according to claim 1 wherein the separating surface is a downwardly directed concave surface.
3. The separating vessel according to claim 2 wherein the concave surface is concentrically disposed relative to the outlet aperture.

4. The separating vessel according to any one of claims 1 to 3 wherein the outlet aperture has dimensions such that the collector material passes through the aperture under the force of gravity, while the molten flux material is substantially prevented from passing through the outlet aperture, so that the majority of molten flux will be arrested at the outlet aperture, but a small portion which may pass through the outlet aperture
5. The separating vessel according to any one of claims 1 to 4 wherein the outlet aperture is disposed at low level in the interior cavity, and a slag outlet will be provided in the container spaced vertically upwardly from the outlet aperture, the arrangement being one wherein molten slag which overlies the collector material in the molten state will drain from the slag outlet during the process of draining the collector material through the outlet aperture.

6. A separating vessel suitable for use in the treatment of a mineral sample wherein a molten slag is separated from a molten collector material substantially as herein described and exemplified with reference to the accompanying drawings.

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7. A method of separating molten collector material from molten slag suitable for use in the treatment of a mineral sample comprising the steps of providing the separating vessel claimed in any one of claims 1 to 6:

10 introducing a mixture of molten slag and molten collector material into the vessel whereby the slag settles above the collector material as a result of density differentials;

draining the collector material through the outlet aperture  
15 under the force of gravity while the slag is substantially arrested by the outlet aperture;

further separating the collector material from the slag which

has passed through the outlet aperture at the separating surface  
where at collector material runs generally vertically  
downwardly from the exit of the outlet aperture under the  
force of gravity while the slag is displaced laterally along the  
5 separating surface.

8. The method according to claim 7 wherein a slag outlet is provided vertically  
upwardly spaced from the collector material outlet including the step of  
draining slag through the slag outlet.
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9. The method according to claim 8 wherein slag is drained through the slag  
outlet during or prior to draining the collector material through the collector  
material outlet aperture.
- 15 10. A method of separating molten collector material from molten slag suitable  
for use in the treatment of a mineral sample substantially as herein described  
and exemplified with reference to the accompanying drawings.